

Work Order ID 60463

Monday, July 12, 2010 8:31:32 AM



Page 1

Item ID: D212-664-207TRN

Revision ID:

Accept



Setup Start



Item Name: Crosstube Turning Detail

Stop



Start Date: 7/12/2010 Start Qty: 1.00

Required Date: 7/15/2010 Req'd Qty: 1.00

Cust Item ID:

Customer:

Reference:

Approvals:

Process Plan:

[Signature]

Date: 10-7-12

Tooling:

Date:

Run

Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

D212-664-247

Rev B

100



Mori Seiki

MORI SEIKI CNC LATHE LARGE

0.00

Memo

0.00

Mori Seiki CNC Lathe Large

1-Fill tube with sand & install plugs DT8534 on both ends as per Folio FA706
2-Turn first side as per Folio FA706
3- File transition lines smooth.

Q.M. 10-07-14 (1)

110



QC

Quality Control

QC1- Inspect dimensions to dimension sheet

0.00

Memo

0.00

Q.M. 10-07-14 (1)

120



Mori Seiki

MORI SEIKI CNC LATHE LARGE

0.00

Memo

0.00

Mori Seiki CNC Lathe Large

1-Turn second side as per Folio FA706
2- File transition lines smooth.
3-Remove sand and plugs

Q.M. 10-07-14 (1)

W/O:		WORK ORDER CHANGES					
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Date:

Run Start

QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

130

QC1- Inspect dimensions to dimension sheet

0.00



QC

Quality Control

Memo

0.00

Com 10-07-14 @

140

QC8- Inspect parts - second check

0.00



QC

Quality Control

Memo

0.00

8/10/15

(40)

150

Crosstubes Chemical Conversion

0.00



HandFXtube

Hand Finishing Crosstubes

Memo

0.00

1 - AWM
10-07-19

W/O:		WORK ORDER CHANGES					
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Page 3

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Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run

Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

160



QC

Quality Control

QC3- Inspect Part Finish

0.00

Memo

0.00

0.00 10 - 02 - 190

170



Packaging

Packaging

Packaging

0.00

Memo

0.00

Identify and stock in kanban rack

Location: X-TUBE CELL

1 - - 10-07-19

180



QC

Quality Control

QC21- Final Inspection - Work Order Release

0.00

Memo

0.00

ME 10-7-19

W/O:		WORK ORDER CHANGES							
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NOTE: Date & initial all entries

Picklist Print

Monday, July 12, 2010 8:31:37 AM

Page 1

Work Order ID: 60463

Parent Item: D212-664-207TRN

Parent Item Name: Crosstube Turning Detail



Start Date: 7/12/2010

Start Qty: 1.00

Required Date: 7/15/2010

Required Qty: 1.00

Comments: IPP Rev:A New Issue 08-03-06 DD verified by:ec
IPP Rev B 08.04.02 Removed polish EC verified DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6008-132 Crosstube extrusion		Manufactured	No			110	Each	5.0000	1	1			



0.7 10-07-14

Location

LG

57660

Loc Qty

5

5

Loc Code

1

W/O:		WORK ORDER CHANGES						
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NOTE: Date & initial all entries

DART AEROSPACE LTD		Work Order: 60463
Description: Crosstube Assembly (205/212 Low Aft)		Part Number: D212-664-247
Inspection Dwg: D212-664-247 Rev: B		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

Inspection Sheet Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
SIDE A	0.438	+/-0.010	0.438	/		Vern
	2.680	+0.005/-0.000	2.685	/		u
	2.680	+0.005/-0.000	2.685	/		u
	2.687	+0.005/-0.000	2.689	/		u
	2.802	+0.005/-0.000	2.807	/		u
	2.906	+0.005/-0.000	2.911	/		u
	3.009	+0.005/-0.000	3.014	/		u
	3.112	+0.005/-0.000	3.117	/		u
	3.250	+0.005/-0.000	3.250	/		u
SIDE B	0.438	+/-0.010	0.438	/		Vern
	2.680	+0.005/-0.000	2.685	/		u
	2.680	+0.005/-0.000	2.684	/		u
	2.687	+0.005/-0.000	2.692	/		u
	2.802	+0.005/-0.000	2.807	/		u
	2.906	+0.005/-0.000	2.911	/		u
	3.009	+0.005/-0.000	3.014	/		u
	3.112	+0.005/-0.000	3.117	/		u
	3.250	+0.005/-0.000	3.250	/		u
	128.268	+/-0.030	128.270	/		T.M.

Measured by: A.M.	Audited by: S	Prototype Approval:	N/A
Date: 10.07.14	Date: 10/07/15	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	08.11.07	New Issue (P/O D212-664-207)	KJ/EC	
B	10.04.01	Dwg Rev updated	KJ	

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Item	Qty -247	Qty -247B	Part Number	Description
1	X		D212-664-247	CROSSTUBE ASSEMBLY (205/212 LOW AFT)
2		X	D212-664-247B	CROSSTUBE ASSEMBLY (214 LOW AFT)
3	1	1	D6008-132	CROSSTUBE
4	2	2	D2940-1	SUPPORT
5	4	4	D3595-063-530	RUBBER CUSHION
6	2	2	D3660-1	CUFF
7	4	4	MS21920-28	CLAMP (OR MS21920-30)
8	44	44	CR3212-4-06	RIVET (OR M7885/3-4-06)
9	A/R	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTROM/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)
10	A/R	A/R	SIKAFLEX-241/-291	SEALANT (OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT)

GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6008-132
FINISHED LENGTH = 128.268±0.020 (BEFORE BENDING/TRIMMING)
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER "D212-664-XXX" AND BATCH NUMBER ON INSIDE OF CUFF
USING VIBRATING STYLUS.
- 7) WEIGHT: D212-664-247 = 36.6 lbs (PER IIN-D212-664)
D212-664-247B = 36.6 lbs (PER IIN-D212-664)
- 8) PART IS SYMMETRIC ABOUT CENTERLINE.
- 9) WHEN MACHINING TAPER, RUN CUTTER OFF PART. BLEND OUT EDGE LONGITUDINALLY, TRANSITION SHOULD
BE SMOOTH.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 8 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6%
BASED ON O.D. EXCEPT UP TO 10% IS ALLOWED IN AREA NOTED.
- 11) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 12) INSTALL D2940-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 TO THE SURFACE OF
D2940-1 THAT WILL BE IN CONTACT WITH THE CROSSTUBE PER QSI 015. LET CURE FOR 12 HOURS AFTER
INSTALLATION AND PRIOR TO PACKAGING.
- 13) INSTALL MS21920-28 CLAMPS (OR -30) WITH D3595-063-530 RUBBER CUSHIONS TO SECURE THE D2940-1
SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMPS ARE OPPOSITE OF CROSSTUBE SUPPORT.
- 14) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE
SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS.
DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE
UNACCEPTABLE.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS
NOT BOTTOMED-OUT AFTER TORQUING.
- 16) INSTALL D3660-1 CUFF AFTER CHEMICAL CONVERSION COAT BUT BEFORE PAINT, WITH A LAYER OF
SIKAFLEX-241/-291 OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT BETWEEN CUFF AND CROSSTUBE.
SEAL EDGE OF CUFF TO ENSURE NO GAPS.
- 17) TOUCH-UP HOLES WITH CHEMICAL CONVERSION COAT.

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 40463
BJ10-7-12

RELEASED
2009-10-29
JMP

B	REVISE GENERAL NOTES/PART LIST; UPDATE TO CURRENT STANDARDS; ADD -247B (ZN C4-2, D5-2)	RF	09.09.30
A	NEW ISSUE	CP	07.07.07
REV.	DESCRIPTION	BY	DATE
DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF	DRAWING NO.	REV. B
CHECKED	RF	D212-664-247	SHEET 1 OF 4
MFG. APPR.	RF	TITLE	SCALE
APPROVED	RF	CROSSTUBE (205/212 LOW AFT)	NTS
DE APPR.	RF	COPYRIGHT © 2007 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	
DATE	09.09.30		

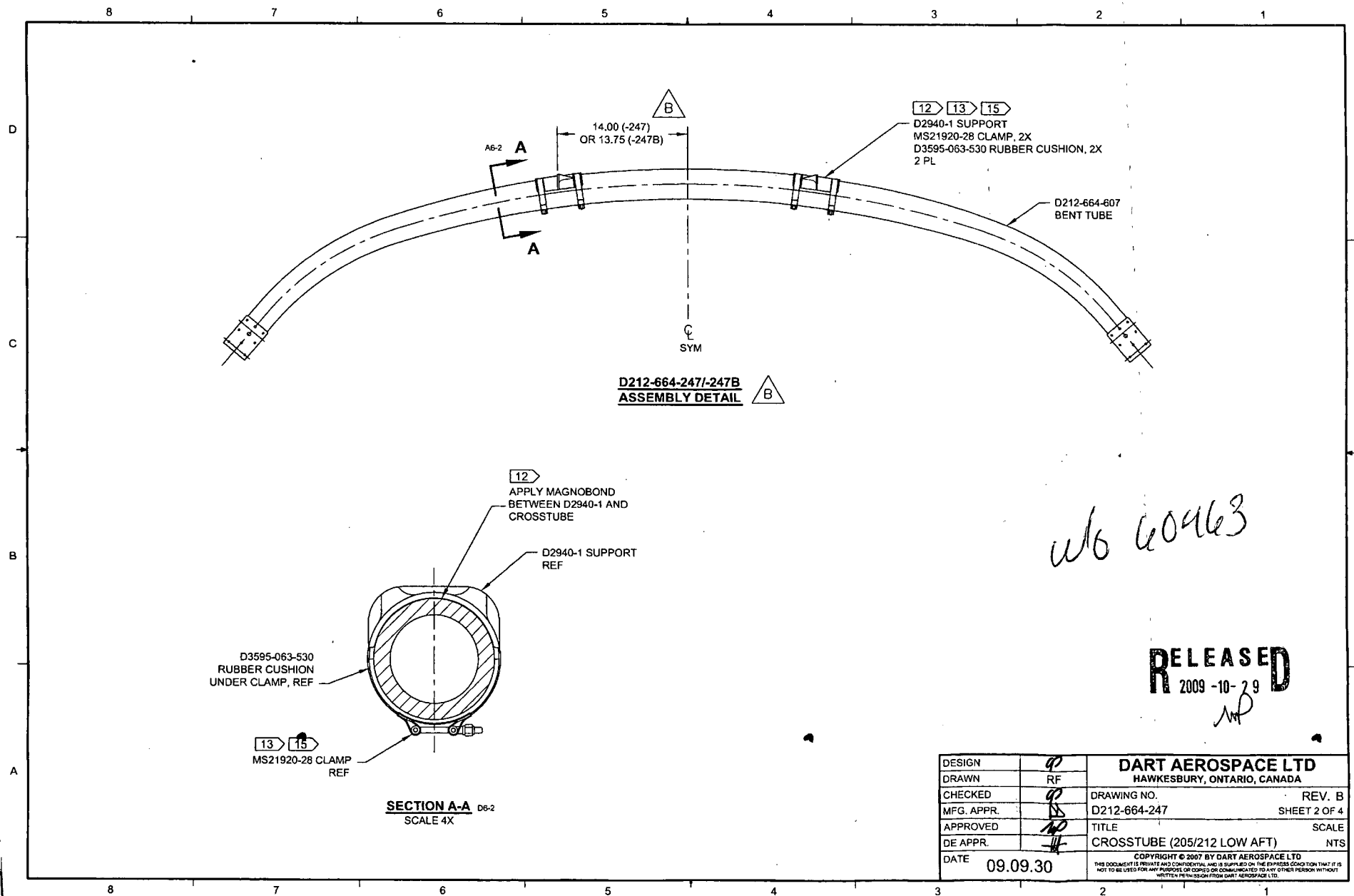
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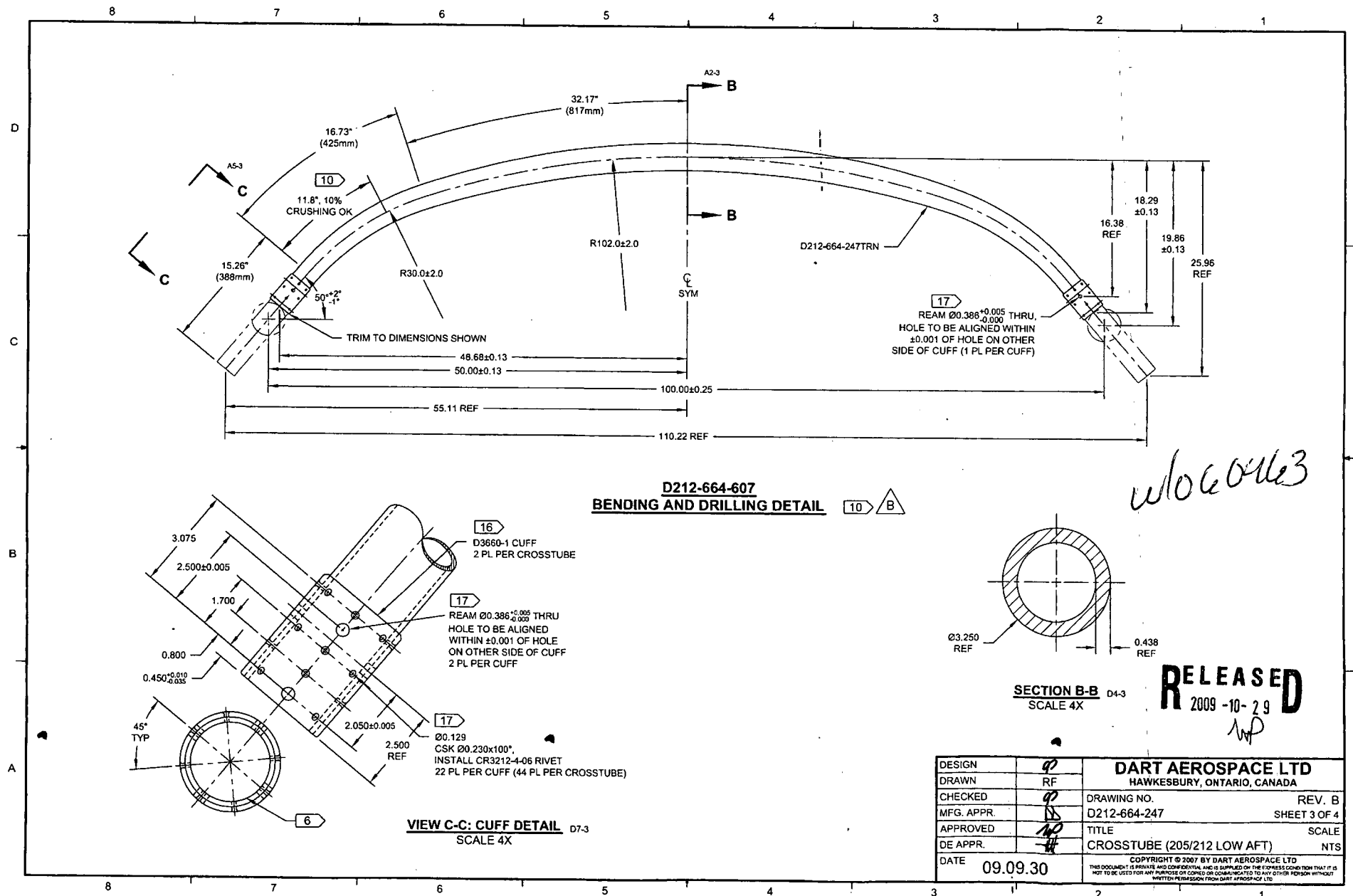
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8 7 6 5 4 3 2 1

D

D

C

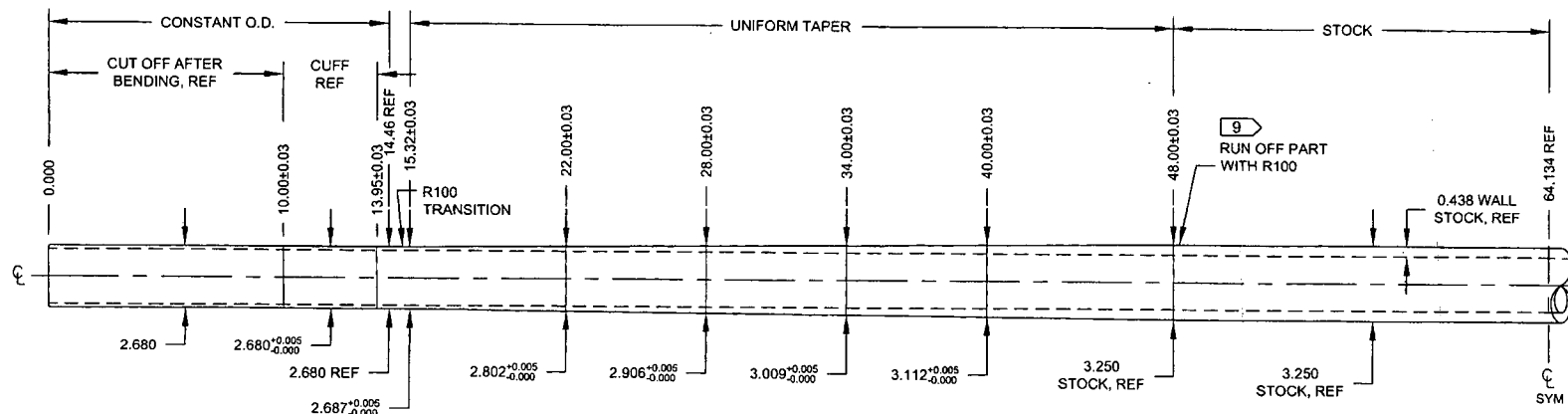
C

B

B

A

A



D212-664-247TRN
TURNING DETAIL

w/o 404163

RELEASED
2009-10-29
my

DESIGN	97	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	97	DRAWING NO.	REV. B
MFG. APPR.	97	D212-664-247	SHEET 4 OF 4
APPROVED	97	TITLE	SCALE
DE APPR.	97	CROSSTUBE (205/212 LOW AFT)	NTS
DATE	09.09.30	COPYRIGHT © 2007 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

8 7 6 5 4 3 2 1

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